Python Interview Resources: https://telegram.me/dsabooks

Sample DataFrame:

EmployeeID	Name	Department	Salary	JoiningDate	PerformanceScore
1	Alice	HR	60000	2020-01-15	3
2	Bob	IT	70000	2019-06-20	4
3	Charlie	IT	80000	2018-07-23	2
4	David	HR	65000	2020-02-10	5
5	Eva	Finance	75000	2021-03-15	3

Interview Questions with Answers:

1. How can you calculate the average salary for each department?

```
average_salary = df.groupby('Department')['Salary'].mean()
print(average_salary)
```

2. Write a function to find the employee with the highest performance score in each department.

```
def highest_performance(df):
    return df.loc[df.groupby('Department')['PerformanceScore'].idxmax()]

highest_performance_df = highest_performance(df)
print(highest_performance_df)
```

3. How would you add a new column that represents the number of years each employee has been with the company based on the JoiningDate?

```
df['YearsWithCompany'] = (pd.to_datetime('today') - df['JoiningDate']).dt.days // 365
print(df)
```

4. Create a pivot table to display the total salary and average performance score for each department.

```
pivot_table = df.pivot_table(values=['Salary', 'PerformanceScore'], index='Department',
aggfunc={'Salary': 'sum', 'PerformanceScore': 'mean'})
print(pivot_table)
```

5. How would you create a new DataFrame containing only the employees from the IT department who have a performance score greater than 3?

```
it_high_performance = df[(df['Department'] == 'IT') & (df['PerformanceScore'] > 3)]
print(it_high_performance)
```

6. Describe how to perform an inner merge of this DataFrame with another DataFrame containing employee bonus information based on EmployeeID.

```
bonus_data = {'EmployeeID': [1, 2, 3, 4, 5], 'Bonus': [5000, 7000, 6000, 6500, 8000]}
bonus_df = pd.DataFrame(bonus_data)

merged_df = pd.merge(df, bonus_df, on='EmployeeID', how='inner')
print(merged_df)
```

7. How can you calculate the cumulative sum of the PerformanceScore column grouped by Department?

```
df['CumulativePerformanceScore'] = df.groupby('Department')['PerformanceScore'].cumsum()
print(df)
```

8. Write a function to rank employees within each department based on their Salary.

```
df['SalaryRank'] = df.groupby('Department')['Salary'].rank(ascending=False)
print(df)
```

9. How can you filter the DataFrame to show only employees who have been with the company for more than 2 years?

```
df['YearsWithCompany'] = (pd.to_datetime('today') - df['JoiningDate']).dt.days // 365
filtered_df = df[df['YearsWithCompany'] > 2]
print(filtered_df)
```

Here are some best Telegram Channels for free education in 2024
👇👇

Data Science & Machine Learning

Programming Free Books

Python Free Courses

Ethical Hacking & Cyber Security

English Speaking & Communication

Stock Marketing & Investment Banking

Coding Projects

Jobs & Internship Opportunities

Crack your coding Interviews

Udemy Free Courses with Certificate

Free access to all the Paid Channels
👇👇
https://t.me/addlist/ID95piZJZa0wYzk5

Do react with ♥ if you need more content like this

ENJOY LEARNING 👍👍